

ABSTRACT

A semiconductor device incorporating a capacitor structure that includes a ferroelectric thin film is
5 obtained by forming, on a single crystalline substrate 10 having a surface suited for growing thereon a thin film layer of ferroelectric single crystal having a plane (111), a ferroelectric single crystalline thin film 12' containing Pb and having a plane (111) 11 in parallel
10 with the surface of the substrate (or a ferroelectric polycrystalline thin film containing Pb and oriented parallel with the plane (111) in parallel with the surface of the substrate) and part 16 of a circuit of a semiconductor device, to thereby fabricate the single
15 crystalline substrate 10 having said ferroelectric thin film containing Pb and said part of the circuit of the semiconductor device; and bonding said single crystalline substrate 10 to another substrate on which the other circuit of the semiconductor device has been formed in
20 advance, to couple the two circuits together.

The capacitor in the semiconductor device thus obtained includes a ferroelectric thin film having a large amount of polarizing charge. The semiconductor device can be used as a highly reliable nonvolatile
25 memory.